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RECENT DEVELOPMENTS IN THE CLASSIFICATION OF SCIENTISTS IN THE FEDERAL SERVICE

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The art of job classification in the Federal Government has undergone many changes since passage of the first Classification Act by the Congress in 1923, but none more important than the newly developed concept for the evaluation of positions in basic and applied research. The new approach is of special importance in solving personnel problems incident to career staffing and promotion programs in Federal agencies. It makes possible a clear-cut avenue of advancement for scientists on a career ladder based on individual research without involvement in program administration. Where many of the larger industrial research installations use job classification systems, the method of evaluation discussed in this paper may well merit industry interest and application in current as well as future situations.

The need for a classification system in the Federal service had long been recognized and urged by the U.S. Civil Service Commission, and though such a plan had been devised during the administration of Theodore Roosevelt in 1907, passage of the necessary legislation was delayed until some years after World War I. The Act, among other things, decreed the principle of equal pay for equal work and thereby abolished the discrimina-

tory practice of paying women less than men for the same occupation. In this respect and others, the new law represented an important reform in Federal employment procedures.

The Classification Act authorized the classification of jobs in accordance with the duties and responsibilities, and assigned salaries to such positions. The current legislative version, known as the "Classification Act of 1949, as amended," reaffirmed the principle of equal pay for substantially equal work and further provided that variations in basic compensation rates "shall be in proportion to substantial differences in the difficulty, responsibility, and qualifications requirements of the work performed and to the contributions of officers and employees to efficiency and economy in the Service." Under the Act, the United States Civil Service Commission has the responsibility for promulgation of standards for placing positions in their proper classes and grades. This represented a tremendous undertaking especially during the past decade, when it became necessary to update many old job standards and to create new ones as the needs of the Federal agencies expanded. During the course of this recent work, the Commission had occasion to review and re-examine the philosophy underlying its administration of the Act. As a result, emphasis is now being devoted to clarification and modification of the traditional practice of classifying the job without reference to the man on the job. Requirements now take into account the qualifications of the incumbent and his impact on the job as reflected by productivity and quality of performance. Recently published job standards clearly reflect this change in emphasis.

For many years the Commission gave emphasis to the concept that in position classification it is the job which is classified and not the person who is performing the work. This concept had several disadvantages since in practice it tended to maintain a rigid position structure and over-emphasized the location of positions in the organization and relationships between organizational levels. In the research situation advancement of top-

rate scientists generally required that they assume managerial responsibilities in which they had little interest and often lacked the ability to perform in the management field. Most serious, perhaps, was the elimination of grade and salary as realistic job incentives even though quality of performance was an indirect factor in selection for promotion to higher grades. Classifying the job without regard to the person does not, however, imply directly that the person in the job has no impact or influence on it, but nevertheless, this effect has been neglected. There are many situations where this influence of the man on the work is so great that the job itself is changed both in kind and level. However, in considering the impact of the person on a position, there is also an inherent danger of over-emphasis since no two people would ever perform a job exactly alike. Minor differences should not be germane but really significant and large differences in performance and ability should be given appropriate recognition. It is obvious that the nature of the work itself is of great importance in determining whether large differences in performance are possible. Such is the case for scientific and technical research, but it is true also for many other positions where imagination and creativity are essential ingredients of success.

Since the position classification system of classifying the job has worked reasonably well for many years the question may well be asked "just what is wrong with it and what modification is necessary to meet the manifold needs of management in its personnel staffing programs to accomplish its mission?" The basic disadvantage is that it gives far too little attention to recognition of exceptional performance and ability of the individual and his effect on the job. This is true in spite of the fact that the Commission and various agencies of the Government, which operate the classification system under delegated authority, have in numerous ways recognized the important relationship between the individual and his job in classification. However, there has not heretofore existed sufficient formal recognition of this factor and

no real mechanism has been available to permit the qualifications of the incumbent to become an integral part of the classification process even though the Classification Act of 1923 clearly provided such consideration.

Although there are many facets to this problem, the one which concerns us here is the classification of positions in basic and applied research. For the lower professional grade levels and extending through the Ph.D. entrance grades (GS-11 or 12), which are generally considered trainee positions, there are a sufficient number of tangible ways to evaluate levels of responsibility and little difficulty is experienced in this area. In the higher grades, however, we find considerable difficulty in making grade level distinctions, particularly in non-managerial situations. This has been a major obstacle in the operation of career staffing and promotion programs even though such programs have enjoyed limited success in a number of agencies. In straight-forward position classification, one of the real stumbling blocks is the language itself. Highly specific descriptions, in which particular words and phrases are used to make grade level differentiation, represent an approach which is generally incomprehensible to all except the expert professional classifier. In this process, the grade distinction factors are not readily discernible and they become shrouded in a kind of exasperating mystery. Undoubtedly, it is this phase of the operation which has been most responsible for the general lack of management interest and participation in the classification process.

The Commission's decision to emphasize qualification requirements in the classification process represented an important advance, but an equally important forward stride was the development of a new method which enables evaluation of quality of performance of the individual as well as the responsibilities of the position. This "philosophy" and the newly developed evaluation methodology, represent the most important breakthrough

in Federal position classification for scientific and technical personnel since the inception of the Classification Act.

The basic evaluation plan for research positions recently put in use by the Civil Service Commission on a Government-wide basis had its origin in a plan developed and proposed by the Personnel Division of the Agricultural Research Service in the U.S. Department of Agriculture. This group undertook a project in 1957 to develop a single standard for research positions in basic and applied research which would encompass the man-in-job concept and provide, among other things, a clearly recognizable career ladder for non-administrative scientific personnel. Initially, this group sought to develop a single standard and rating system for the broad spectrum of positions in the biological sciences. When the job was completed, the method was capable also of application to research positions in the physical sciences and engineering as well. This version of the present Commission plan has been in successful use by the Agricultural Research Service of the U.S. Department of Agriculture for the past several years. From the standpoint of research management and laboratory scientists, the technique represents a very satisfactory answer to the former difficulties.

The evaluation method finally adopted by the Civil Service Commision for Government-wide use represented an integration of the Agricultural Research Service version somewhat modified through its own studies and through suggestions from numerous Federal research installations which tested a tentative procedure issued by the Commission in 1959. It was determined through experimental use that grade levels of research positions depend on essentially the same elements which are independent of the subject field. Consolidation of these common elements was made into the following four factors: *I. The Research Situation, or Assignment* (nature of the problem, its scope, objective, and complexity); *II. Supervision Received* (nature and extent of guidance required); *III. Guidelines and Originality* (state of existing theory,

established principles, methods and techniques, and degree of creativity required); and *IV. Qualifications and Scientific Contributions* (extent and quality of publications, patents, scientific awards, and other recognition).

A Factor Evaluation Chart was devised in which three degrees,* A, C, and E, are defined and these serve as a basis for evaluating each factor for a particular position. In order to quantitate the evaluation, point values of 2, 6, and 10 are assigned to the three defined degrees of A, C, and E, respectively for Factors I–III. Intermediate degrees B and D remain without definition due to language imprecision, but may be employed in situations which fall between the defined degrees. Point values for Factor IV, Qualifications and Scientific Contributions, are doubled to give proportionate weight in relation to the other three factors. Conversion of point scores to grade level is made by means of a Grade Determination Chart. The Commission in its "Guide for Evaluation of Positions in Basic and Applied Research of June 1960"[1] further provides as follows:

> *"The fact that judgments are quantified should not be allowed to obscure the fact that they are judgments and that final decisions should rest on sound application of judgement rather than upon uncritical application of numbers.* In applying a degree definition, *the definition as a whole, in its total context* must be applied—not isolated words or phrases."

A useful additional part of the evaluation method is provided in an appendix to the Guide referred to above which illustrates actual research situations for Factor I. These serve as background for interpretation of the necessarily abstract language of the standard.

The effect of the qualification requirements when quantified by this evaluation method is such that for a given job, where the potential for original and creative work is high, the grade level may be quite different depending upon the ability of the individual. This is really the heart of the so-called "man-in job"

* The degrees are defined in reference 1.

concept and is analogous to the recognized principle in many nonresearch situations that the incumbent may appreciably modify the position as performed by reason of his qualifications and ability. There is really nothing unusual about this since it is the basis for one's choosing "Attorney A" instead of "B" for a given legal task or "Doctor X" over "Doctor Y" for certain medical treatment. It is surprising that it took so many years to gain formal recognition in our civil service procedures. Still, the older ideas embodied in classifying the job without regard to the incumbent are so deeply ingrained that it may well be years before adoption by some of the Executive Agencies.

A unique and important feature of the operation of this evaluation method involves the participation of scientists as well as administrative personnel. In view of the emphasis given to scientific qualifications and quality of performance in the evaluation process, it is clearly essential that the multiple judgments required be rendered by persons with a scientific or technical background as well as by specialized administrative personnel. Among other functions, the latter provide a basis for maintaining a balance across disciplinary lines. These provisions were favored by an overwhelming majority of research installations which participated in the preliminary experimental study of the plan. Thus, the plan not only provides for recognition of scientific abilities and attainments in determining grade levels (which meets a contention long held by scientists) but also makes possible a judgment of these qualities by a panel of peers. It is a system that is easily understood, it ranks positions in proper relationship, and is equitable across disciplinary lines.

Reference

1. *"Position Classification* Standards of June 1960," CS 1.39:28, Superintendent of Documents, Government Printing Office, Washington, D.C.

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